

CASE SUMMARY

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# Polaris

## POLARIS INDUSTRIES, INC. Spirit Lake, Iowa (Dickinson County)

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### The Company

Polaris Industries, Inc. has engineering, manufacturing and distribution facilities across the Midwest, and wholly owned subsidiaries in Canada, Australia, and New Zealand. It is publicly traded and has over \$1 billion in worldwide sales annually. The Spirit Lake facility produces personal watercraft, all terrain vehicles, and motorcycles.

### Project Background

Polaris Industries has a pollution prevention policy statement and annually recycles 300 tons of corrugated boxes. A metal recycling program is also in place.

### Incentives to Change

Polaris Industries desires to reduce the amount of Volatile Organic Compounds (VOC's) produced, eliminate harmful effects on the environment, reduce operational costs, and establish themselves as a community leader.

### Results

Four opportunities for potential annual saving are:

#### 1. Reuse Polystyrene — \$40,000

Polystyrene sheets and blocks are used as packaging material to protect the plastic body parts of the all terrain vehicles (ATV) in transit from Roseau, Minnesota, where they are manufactured, to Spirit Lake, where they are assembled. The ATV body parts are shipped in returnable plastic totes with sheets placed between each product to protect the surface from scratching. The most cost effective handling procedure would be to collect the sheets at the point of assembly, folded them, and send them back to Roseau for re-use. If this recommendation was implemented, at current production levels, it would generate annual savings of \$40,000.

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## **2. Solvent Reclamation Unit — \$30,000**

Polaris has implemented the use of a solvent still that can recover about 75% of the total solvent, which can then be reused. This reduces purchase costs by over \$15,000 and disposal costs by \$14,000 annually. The equipment was priced at \$8,500 with an additional \$3,000 for installation and \$0.13 per gallon operating expenses. The ROI is about four months. By implementing the solvent still, the company will realize annual savings of about \$30,000, reduce VOC's significantly, and demonstrate conservative manufacturing aimed at the bottom line.

## **3. Liquid Paint Transfer Efficiency — \$60,000**

With the addition of two new robots, the liquid paint annex has replaced four hand operated paint booths with four robots equipped with High Volume Low Pressure (HVLP) guns. These two new robots will spray primer and two types of clear coat at a transfer efficiency of 70%, in comparison to 20% previously being realized by the manual guns. This implementation, with a purchase price of \$62,500, saves 1,903 gallons of paint annually and accounts for over 5 tons of special waste being diverted from the landfill, which represents a savings of \$1,500 in annual disposal costs.

## **4. Redesign of wastewater treatment — \$59,000**

Multiple improvements led to this cost savings. Nearly \$50,000 annually can be saved by the implementation of a new technology in wastewater treatment that lowers operational costs and reduces effluent by 98%. The unit can process 198,000 gallons per year, will cost about \$37,000 to install, and will achieve pay-back in about nine months. In addition to cost savings, it will greatly decrease chemical usage and laborious monitoring of the wastewater treatment facility. This project will help Polaris achieve zero discharge goals and allow the company to exceed environmental regulations.

Total opportunities for this business include 85,000 pounds of solid waste diverted from the landfill and over 4,000 gallons of hazardous waste eliminated. The exchange of powder paint could eliminate an additional 12,000 pounds of solid waste from the landfill.